

**CONTAINS:  
MAY 1991  
UNITED  
STATES  
MONTHLY  
CLIMATE  
SUMMARY**

# WEEKLY CLIMATE BULLETIN

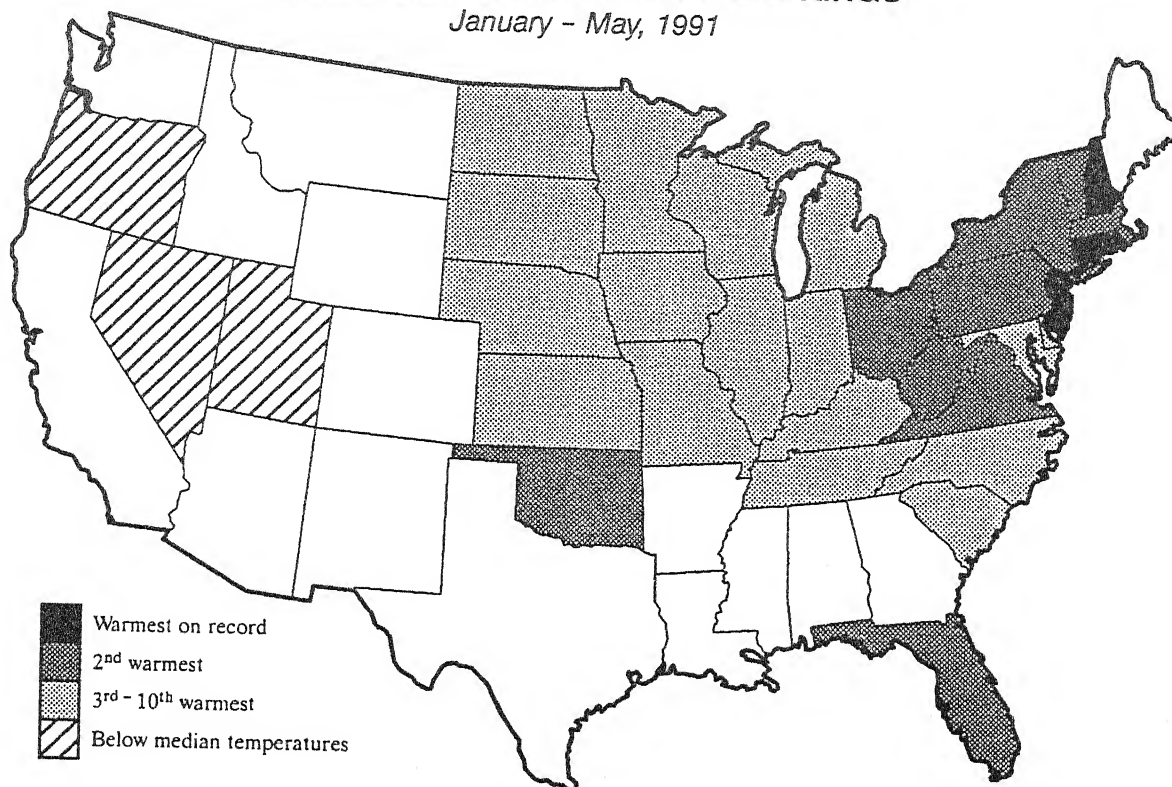
No. 91/23

Washington, DC

June 8, 1991

## STATEWIDE TEMPERATURE RANKINGS

*January - May, 1991*



Based on all Jan - May periods during 1895 - 1991 (97 years)

Data compiled by the National Climatic Data Center

1991 has gotten off to an exceptionally mild start across the central and eastern United States. January - May 1991 ranked as the warmest such period on record (since 1895) in 4 states (CT, NH, NJ, and RI) and as the second warmest in 9 others (FL, MA, NY, OH, OK, PA, VT, VA, and WV), according to the National Climatic Data Center. In contrast, only three western states (UT, NV, and OR) experienced below median temperatures during the five-month period. More than half of the lower 48 states reported one of the ten mildest starts to a year, which ranked as the seventh warmest such period nationally (for more information, see the United States Monthly Climate Summary for May, pp. 9 - 18).



**UNITED STATES DEPARTMENT OF COMMERCE**  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL WEATHER SERVICE-NATIONAL METEOROLOGICAL CENTER

**CLIMATE ANALYSIS CENTER**



# WEEKLY CLIMATE BULLETIN

This Bulletin is issued weekly by the Climate Analysis Center and is designed to indicate, in a brief concise format, current surface climatic conditions in the United States and around the world. The Bulletin contains:

- *Highlights of major climatic events and anomalies.*
- *U.S. climatic conditions for the previous week.*
- *U.S. apparent temperatures (summer) or wind chill (winter).*
- *U.S. cooling degree days (summer) or heating degree days (winter).*
- *Global two-week temperature anomalies.*
- *Global four-week precipitation anomalies.*
- *Global monthly temperature and precipitation anomalies.*
- *Global three-month precipitation anomalies (once a month).*
- *Global twelve-month precipitation anomalies (every three months).*
- *Global three-month temperature anomalies for winter and summer seasons.*
- *Special climate summaries, explanations, etc. (as appropriate).*

*Most analyses contained in this Bulletin are based on preliminary, unchecked data received at the Climate Analysis Center via the Global Telecommunications System. Similar analyses based on final, checked data are likely to differ to some extent from those presented here.*

## STAFF

<b>Editor</b>	Tom Heddinghaus
<b>Associate Editor</b>	Richard J. Tinker
<b>Contributors</b>	Joe Harrison
	Brian K. Hurley
	Paul Sabol
	David C. Stutzer
<b>Graphics</b>	Robert H. Churchill
	Alan Herman

*To receive copies of the Bulletin or to change mailing address, write to:*

Climate Analysis Center, W/NMC53  
Attn: WEEKLY CLIMATE BULLETIN  
NOAA, National Weather Service  
Washington, DC 20233

*For CHANGE OF ADDRESS, please include a copy of your old mailing label.*

**Phone: (301) 763-8071**

## WEEKLY CLIMATE BULLETIN REQUESTS

- ☐ Please ADD my address to your mailing list.
- ☐ Please CHANGE my address on your mailing list.
- ☐ Please DROP my address from your mailing list.

Name \_\_\_\_\_

Organization \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_

State \_\_\_\_\_

Zip \_\_\_\_\_

# GLOBAL CLIMATE HIGHLIGHTS

## MAJOR CLIMATIC EVENTS AND ANOMALIES AS OF JUNE 8, 1991

### Northwestern, Central, and Southeastern United States:

#### **RIER IN NORTHWEST, BUT MORE RAIN ELSEWHERE.**

tered totals of 5-30 mm dampened the northern Intermountain t and Pacific Northwest, ending significant moisture surpluses, another week of moderate to heavy rains plagued much of the ral and southeastern U.S. The heaviest amounts (75-335 mm) : measured from southeastern Kansas southwestward through h of northern and central Texas as well as from eastern Nebraska eastward through much of Iowa and southern Minnesota. In tion, scattered totals of 35-200 mm soaked the already drenched ral Gulf Coast, producing surpluses up to 275 mm since late April weeks].

### East-Central North America:

#### **HEAT WAVE BREAKS IN MOST AREAS.**

r or below normal temperatures brought a sharp end to the hot spell ss the eastern U.S., but weekly departures of +3°C to +6°C kept mild spell intact across much of southern Canada [Ending after eeks].

### Bermuda:

#### **HEAVY RAINFALL BRINGS SUBSTANTIAL RELIEF.**

r a record dry May, more than 75 mm of rain soaked the island ng the first week of June, significantly decreasing short-term sture deficits; shortfalls since mid-April dropped below 60 mm ded after 6 weeks].

### East-Central South America:

#### **EXCESS RAIN REPORTED AS WINTER APPROACHES.**

ourth consecutive wet week brought 20-60 mm of rain to much of guay and northeastern Argentina and up to 150 mm of rain to reme southern Brazil and southern Paraguay. Since early May, -280 mm of excess rain has fallen on some locations [4 weeks].

### Eastern Europe, North Africa, and the Middle East:

#### **WIDESPREAD BELOW NORMAL TEMPERATURES.**

peratures averaged 4°C to 7°C below normal throughout the ion, with daily departures dropping as low as -11°C in Italy [8 ks].

### Eastern Europe:

#### **MOISTURE SURPLUSES BECOME SPOTTY.**

lowing a week with relatively light precipitation (less than 20 mm), wers brought only scattered moderate rains of 20-60 mm across

eastern Europe, ending most moisture surpluses. Pockets of wetness, however, remain in the Ukraine, Italy, Yugoslavia, and the Alps [Ended after 9 weeks].

### 7. West-Central Africa:

#### **WARMER AND SLIGHTLY DRIER WEATHER OBSERVED.**

Near normal temperatures brought an end to the recent cool spell [Ended after 4 weeks], but rainfall surpluses were only slightly reduced by a relatively dry week. Generally 20-60 mm of rain fell, keeping many locations 230-400 mm above normal since late April in Cote d'Ivoire and Burkina Faso. Farther west, the wettest week of the rainy season (so far) brought 30-50 mm of rain to southwestern Mali, eastern Senegal, and portions of central Mauritania [7 weeks].

### 8. India, Afghanistan, and Pakistan:

#### **SWELTERING HEAT COVERS REGION.**

Nearly twenty dozen individuals have lost their lives during two weeks of exceedingly hot weather, according to press reports. Readings exceeded 50°C in isolated spots of Pakistan while high humidity combined with the heat to send apparent temperatures up to 54°C in parts of India. Press reports have stated that this season has been the hottest in 75 years across western India [2 weeks].

### 9. Southwestern India:

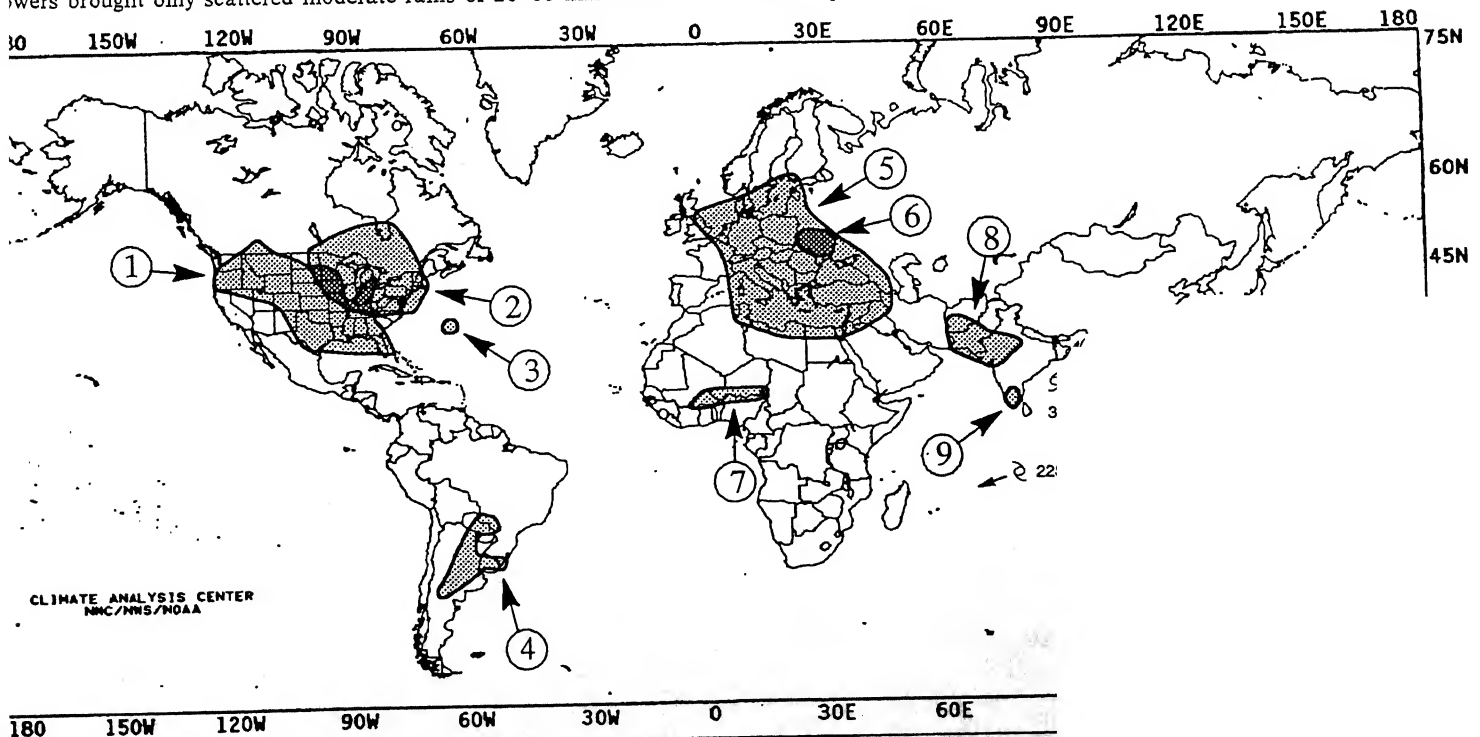
#### **INUNDATING RAINS DRENCH SOUTHEASTERN COAST.**

After a rather dry start to the recent monsoon season across southern India, exceptionally heavy rains began moving northward along the western coastline. Weekly totals up to 465 mm soaked southwestern India, with totals of 100-150 mm recorded just to the north, most of which fell on Sunday [1 week].

### 10. Taiwan, Luzon, and Southeastern China:

#### **RAINS REDUCE CHINESE DEFICITS, BUT LARGE SHORTFALLS PERSIST AT MOST LOCATIONS.**

Heavy rainfall brought an end to moisture deficits across most of southeastern China, but large deficits continued despite moderate rains along the immediate southeastern coast and southern Fujian, and shortfalls continued to grow across Taiwan, Luzon, and the Ryukyu Islands. Scattered totals of 150-300 mm soaked western sections of affected China and northern Fujian while 30-80 mm were recorded in the remainder of southeastern China and in central Taiwan. Little or no rain was measured elsewhere. Since late April, deficits of 95-335 mm have accumulated in most areas, reaching 395 mm in parts of Taiwan [5 weeks].



#### **EXPLANATION**

EXT: Approximate duration of anomalies is in brackets. Precipitation and temperature data are this we  
 1AP: Approximate locations of major anomalies and episodic events are shown. See other maps in t  
 temperature anomalies, four-week precipitation anomalies, longer-term anomalies, and other

# UNITED STATES WEEKLY CLIMATE HIGHLIGHTS

FOR THE WEEK OF JUNE 2 - 8, 1991

Violent weather battered the nation's midsection as severe thunderstorms spawned tornadoes, hail, high wind, and heavy rains that caused widespread flash flooding. Torrential rains inundated south-central Minnesota, north-central Iowa, southern and eastern Oklahoma, and central Texas (Figure 1). Heavy rains also soaked northeastern Florida, where urban flooding struck Jacksonville. Oklahoma endured very heavy rains on Saturday morning, causing homes to be evacuated and cars to be washed off roads. A water line was broken in Carter county, OK, and a chunk of roadway was torn out of route 9 just south of Oklahoma City, according to press reports. High water closed all highways in Marshall County, OK. Intense thunderstorms generated baseball size hail and damaging gusts of up to 80 mph from the Rockies to the Great Lakes and southern Atlantic coast. A number of tornadoes touched down in the central and southern Plains, although there were no reports of injuries or major damage. Hot weather continued across the northern Plains and upper Mississippi Valley, where temperatures averaged more than 5°F above normal but cooler air brought relief to the Atlantic coast states as daily record lows were set across Georgia and northern Florida. Temperatures continued well below normal in the Pacific Northwest where record lows were also reported and frost was scattered through the Hood River area in Oregon.

At the start of the week, showers and thunderstorms were spread from the Rockies to the East Coast. Intense thunderstorms erupted across the central and southern Plains, generating heavy rain and large hail. Five tornadoes and 32 accounts of wind and hail damage were reported from Texas to Iowa. Flash flooding occurred in Colorado, Wyoming, southern Minnesota, and northern Iowa while heavy rain drenched northern Florida and parts of the mid Atlantic. Unseasonably cool and windy weather prevailed in the Pacific Northwest while cooler air broke the Eastern heat wave sending temperatures well below normal for a few days.

During the latter half of the week, showers and thunderstorms continued across the northern and central Rockies, Great Plains, and Southeast. Tornadoes touched down Thursday evening in Colorado, New Mexico, and Texas while hail 4.5 inches in diameter fell northwest of Rosewell, NM.

Thunderstorms produced locally heavy rain in west-central South Dakota and generated strong winds in portions of Florida and the south-central Plains. At week's end, thunderstorms reached from the Texas Gulf Coast to eastern Kansas and northeastern Missouri with torrential rains flooding parts of central Oklahoma.

According to River Forecast Centers, the greatest weekly totals (up to 13 inches) fell on central Oklahoma and the northern half of Texas. More than 2 inches soaked the central and southern Great Plains, central Gulf coast, eastern Florida, southeastern Georgia, central Arkansas, eastern Nebraska, central Arkansas, and south-central Minnesota, and scattered locations across the northern Rockies, the northern Plains, the Ohio Valley, the central and southern Appalachians, the mid Atlantic, southern Alaska, and eastern Hawaii (Table 1). Moderate amounts were measured across the remainders of the Great Plains, Southeast, northern Rockies, and Mississippi Valley, and in portions of the Northeast. Little or no precipitation was reported in most of the Far West, Southwest, and Great Lakes, as well as the remainder of the Northeast.

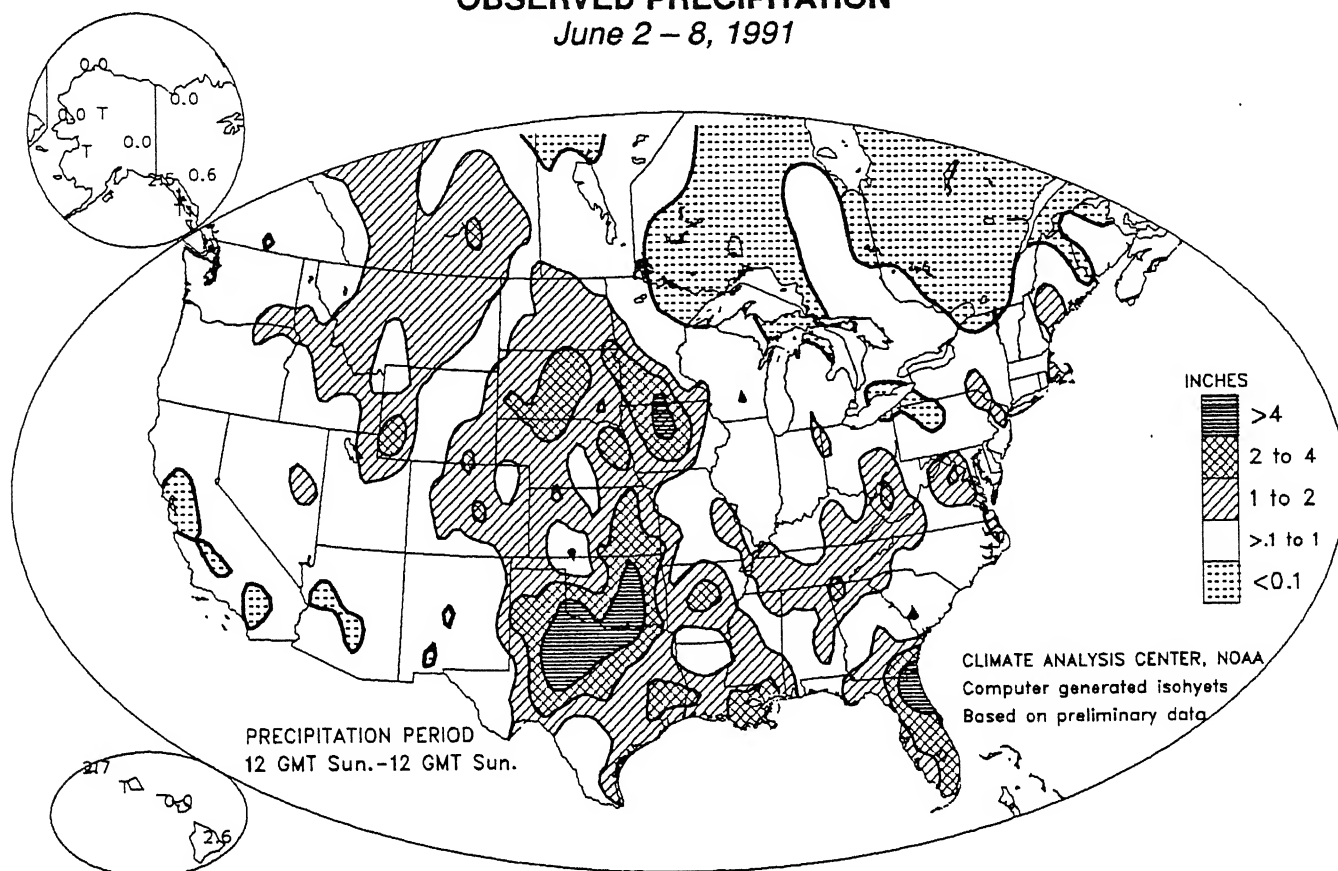
Unseasonably warm weather continued across the north central states from the northern Rockies to the Great Lakes, with numerous stations averaging more than 5°F above normal (Table 2). Temperatures were also abnormally high in southern Florida, the lower Mississippi Valley, southern Texas, the Sierra Nevadas, and northern and eastern Alaska, where temperatures departures reached more than +3°F. Temperatures reached into the nineties in the middle Mississippi Valley while a combination of heat and humidity brought triple-digit apparent temperatures to portions of the South (page 5). Near normal temperatures prevailed in Hawaii.

Cool weather persisted in the Northwest and much of the Southwest as temperatures averaged as much as 6°F below normal (Table 3). Record daily low temperatures were set in the Pacific Northwest, where subfreezing readings were measured in the higher elevations and along the southern Atlantic coast. Cooler air brought relief from the recent heat wave to much of the southern Plains and middle and southern Atlantic coast states as weekly departures averaged around -3°F. Slightly below normal temperatures also settled into southeastern Alaska.

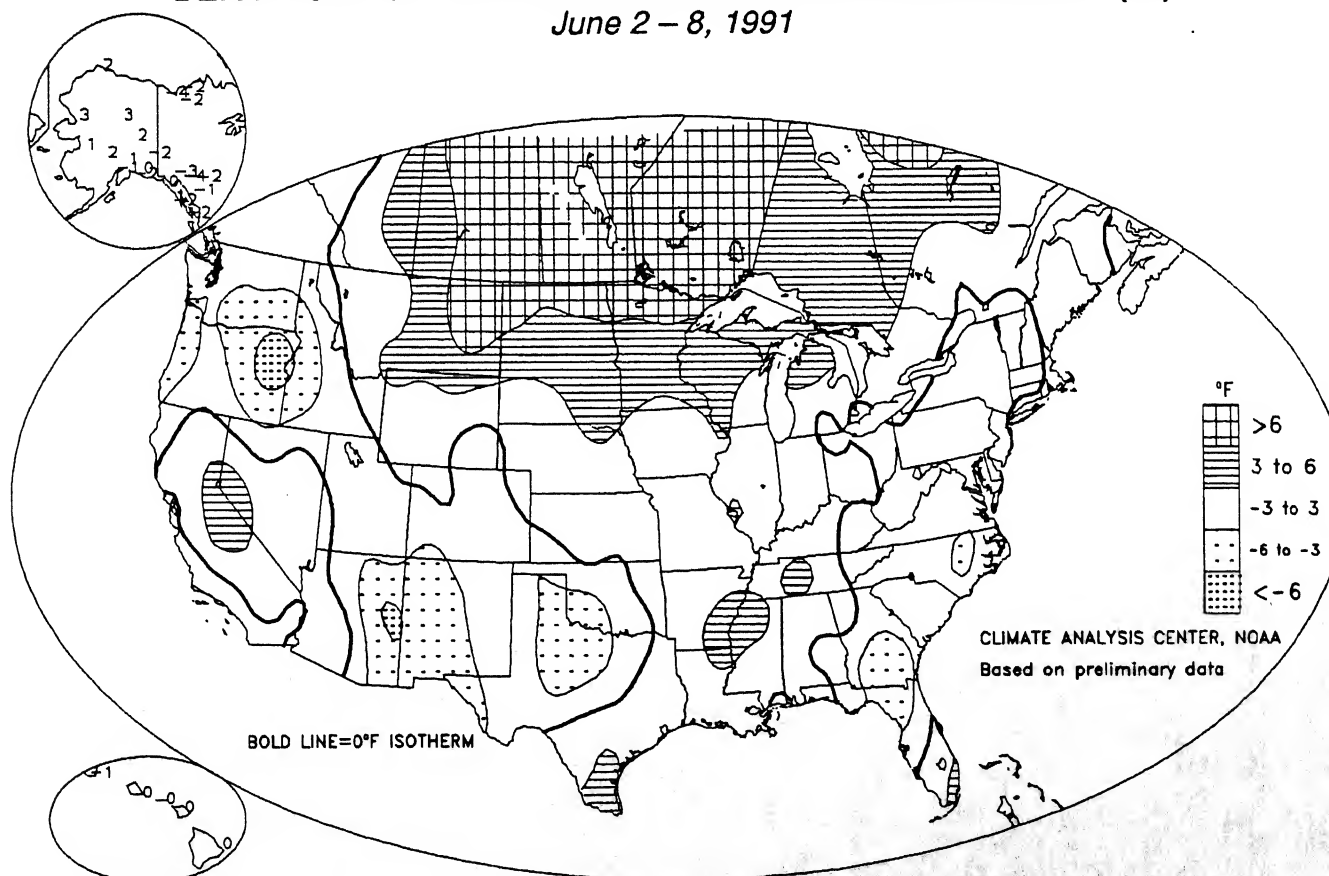
**TABLE 1. SELECTED STATIONS WITH 2.50 OR MORE INCHES OF PRECIPITATION  
DURING THE WEEK OF JUNE 2 - 8, 1991**

<u>STATION</u>	<u>TOTAL</u> (INCHES)	<u>STATION</u>	<u>TOTAL</u> (INCHES)
JACKSONVILLE NAS, FL	8.04	DALLAS NAS, TX	3.57
ABILENE, TX	6.46	SAN ANGELO, TX	3.53
JACKSONVILLE, FL	6.42	KEY WEST NAS, FL	3.28
ABILENE/DYESS AFB, TX	6.27	FORT WORTH/CARSWELL AFB, TX	2.81
DAYTONA BEACH, FL	6.19	COLORADO SPRINGS, CO	2.78
NORFOLK, NE	5.42	LIHUE/KAUAI, HI	2.72
GAINESVILLE, FL	4.74	WICHITA FALLS, TX	2.68
ALTUS AFB, OK	4.58	HOBART, OK	2.66
WASHINGTON/DULLES, VA	4.34	VERO BEACH, FL	2.65
PIERRE, SD	4.15	VALDOSTA, GA	2.59
JACKSONVILLE/CECIL, FL	4.11	HILO/LYMAN, HI	2.58
HOUSTON/WM. HOBBY, TX	3.64	YAKUTAT, AK	2.53

# **OBSERVED PRECIPITATION** *June 2 – 8, 1991*



# **DEPARTURE OF AVERAGE TEMPERATURE FROM NORMAL (°F)** *June 2 – 8, 1991*



**TABLE 2. SELECTED STATIONS WITH TEMPERATURES AVERAGING 5.0°F OR MORE  
ABOVE NORMAL FOR THE WEEK OF JUNE 2 - 8, 1991**

<u>STATION</u>	<u>DEPARTURE</u> (°F)	<u>AVERAGE</u> (°F)	<u>STATION</u>	<u>DEPARTURE</u> (°F)	<u>AVERAGE</u> (°F)
NOME, AK	+8.5	51.3	FARGO, ND	+6.1	68.6
VICTORVILLE/GEORGE AFB, CA	+7.6	76.2	HANCOCK/HOUGHTON CO, MI	+6.0	61.9
MILES CITY, MT	+7.6	70.6	SAULT STE. MARIE, MI	+5.9	61.7
WILLISTON, ND	+7.2	68.3	MCALLEN, TX	+5.7	87.7
GLASGOW, MT	+7.2	68.2	BISMARCK, ND	+5.6	66.9
INTERNATIONAL FALLS, MN	+7.2	65.5	ESCENABA, MI	+5.5	62.8
GRAND FORKS, ND	+7.0	68.1	MINOT, ND	+5.2	65.6
DEVIL'S LAKE, ND	+7.0	66.1	PELLSTON, MI	+5.1	63.2
WARROAD, MN	+6.5	65.4	ALEXANDRIA, MN	+5.0	67.3
DICKINSON, ND	+6.3	65.8			

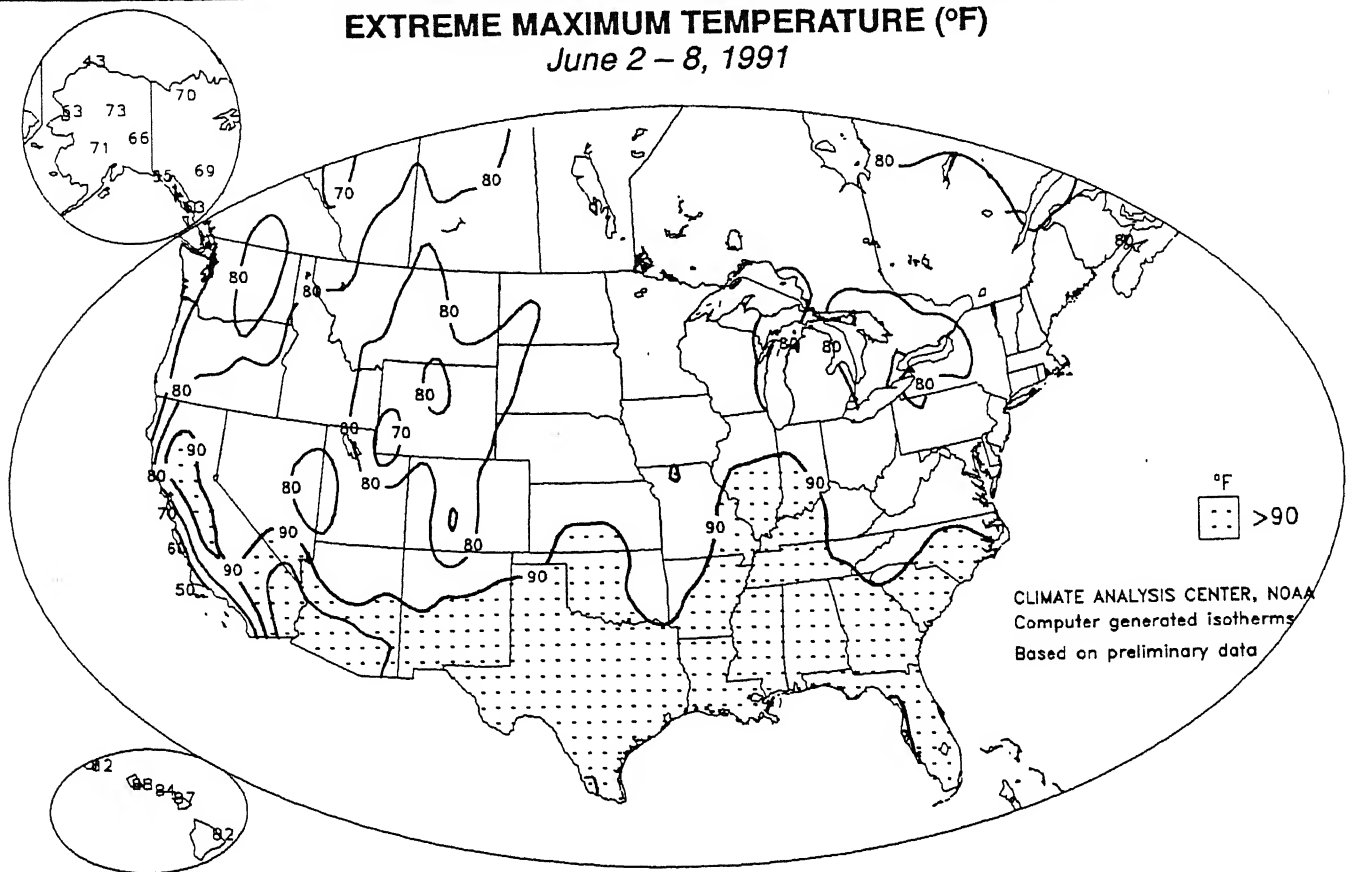
**TABLE 3. SELECTED STATIONS WITH TEMPERATURES AVERAGING 3.75°F OR MORE  
BELOW NORMAL FOR THE WEEK OF JUNE 2 - 8, 1991**

<u>STATION</u>	<u>DEPARTURE</u> (°F)	<u>AVERAGE</u> (°F)	<u>STATION</u>	<u>DEPARTURE</u> (°F)	<u>AVERAGE</u> (°F)
PENDLETON, OR	-6.3	56.9	DEMING, NM	-4.4	69.9
BAKER, OR	-6.2	50.6	ABILENE, TX	-4.4	73.7
MEACHAM, OR	-6.1	45.1	HENRY POST/FORT SILL, OK	-4.2	72.1
WINSLOW, AZ	-6.1	63.1	STAMPEDE PASS, WA	-4.0	42.7
BURNS, OR	-5.8	51.4	WENATCHEE, WA	-3.9	60.9
EL PASO, TX	-5.6	73.5	FARMINGTON, NM	-3.9	62.1
WALLA WALLA, WA	-5.5	58.6	TUCUMCARI, NM	-3.9	69.7
DOUGLAS, AZ	-4.8	69.5	OLYMPIA, WA	-3.8	53.0
LEWISTON, ID	-4.7	58.3	WAYCROSS, GA	-3.8	74.9
HOBART, OK	-4.7	71.3	GAINESVILLE, FL	-3.8	75.1



## EXTREME MAXIMUM TEMPERATURE (°F)

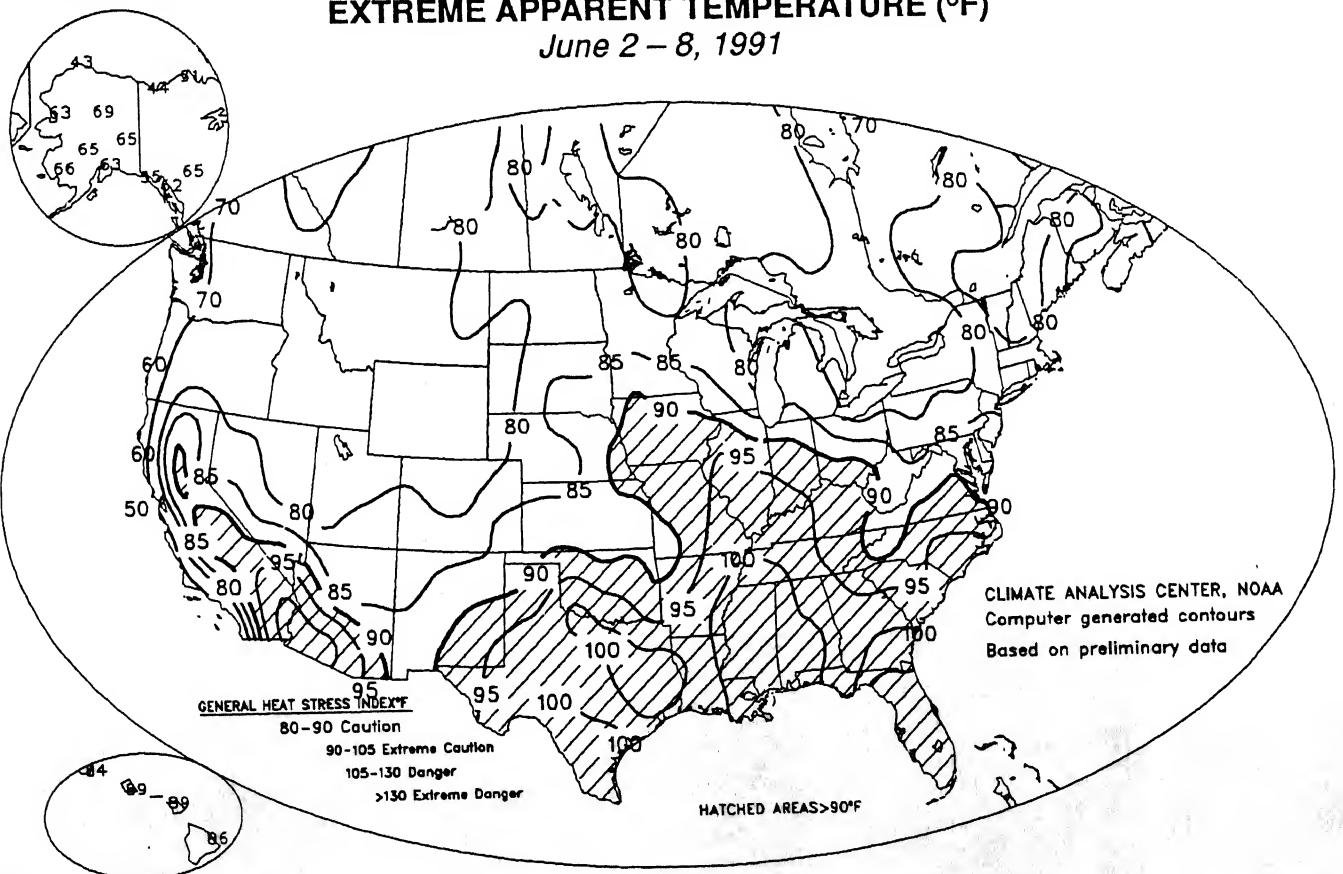
June 2 – 8, 1991



Cooler, more seasonable conditions returned to the eastern half of the nation as 90°F+ readings were confined to the South, portions of the Mississippi Valley, Desert Southwest, and central Sierras (top). High relative humidities via the Gulf of Mexico combined with the heat to produce oppressive conditions in portions of the Southeast, southern Plains, and Southwest with apparent temperatures of 100°F and higher (bottom).

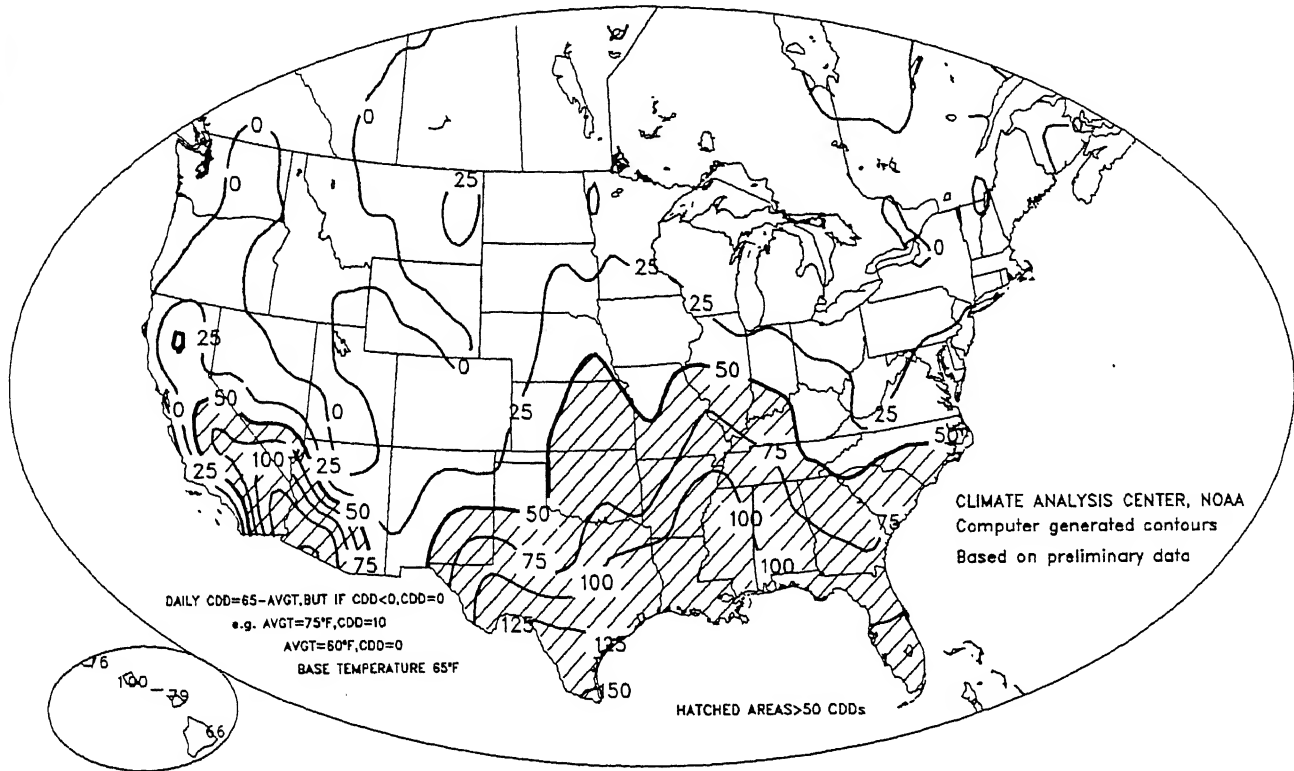
## EXTREME APPARENT TEMPERATURE (°F)

June 2 – 8, 1991



## WEEKLY TOTAL COOLING DEGREE DAYS

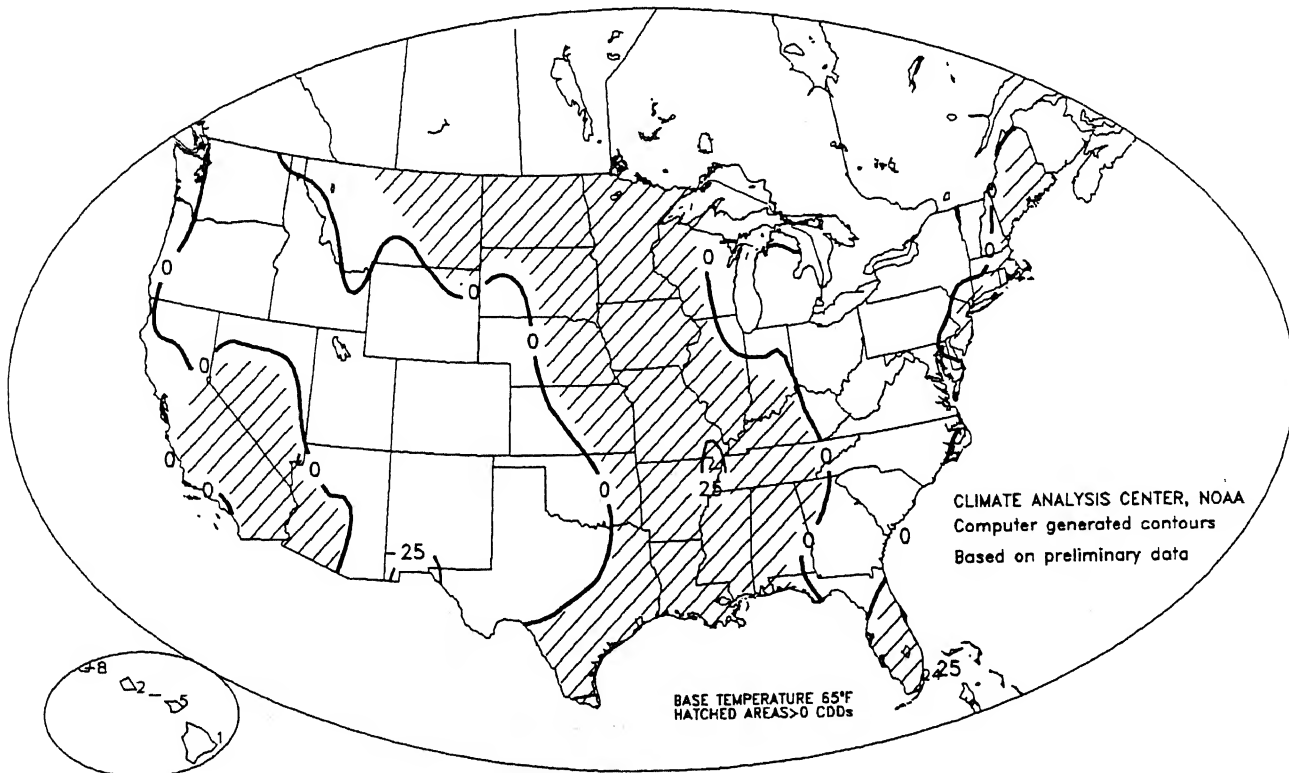
June 2 - 8, 1991



**THIS WILL BE THE LAST ISSUE IN WHICH DEGREE DAY MAPS WILL APPEAR IN THE WEEKLY CLIMATE BULLETIN ON A REGULAR BASIS. CONTACT THE CLIMATE ANALYSIS CENTER FOR FURTHER INFORMATION (ADDRESS AND PHONE NUMBER ON INSIDE FRONT COVER).**

## WEEKLY DEPARTURE FROM NORMAL CDD

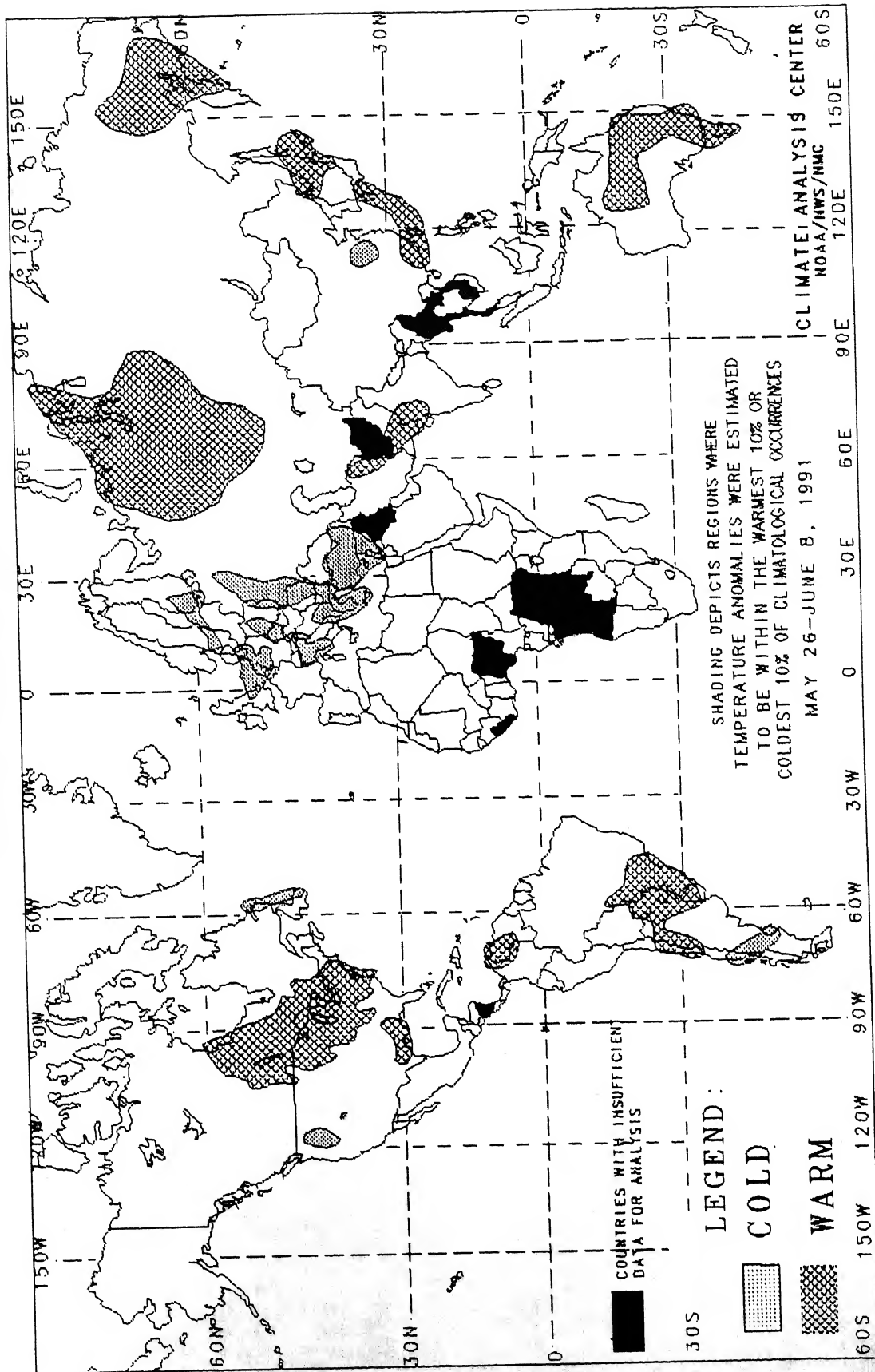
June 2 - 8, 1991





# 2-WEEK GLOBAL TEMPERATURE ANOMALIES

MAY 26 - JUNE 8, 1991



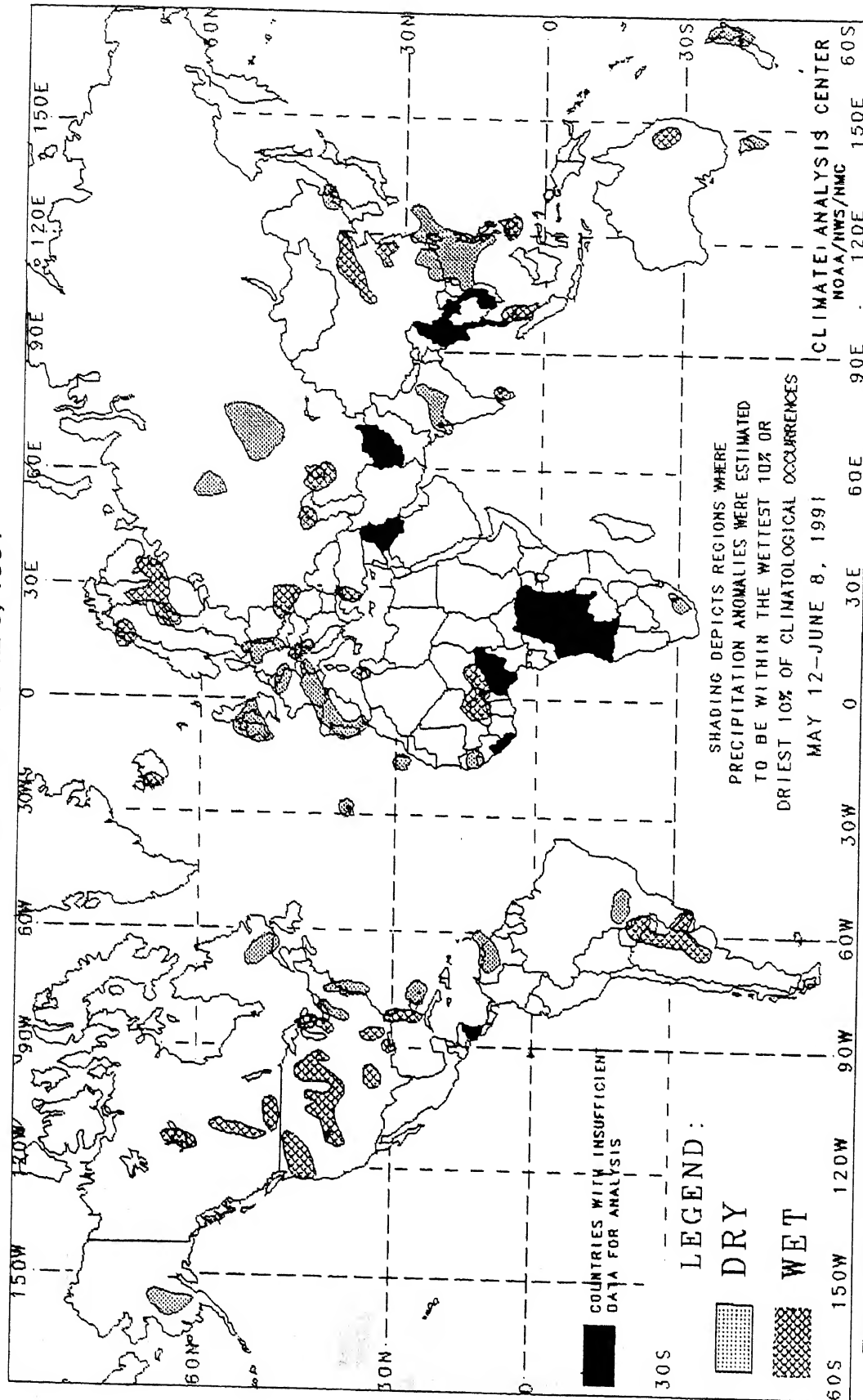
The anomalies on this chart are based on approximately 2500 observing stations for which at least 13 days of temperature observations were received from synoptic reports. Many stations do not operate on a twenty-four hour basis so many night time observations are not taken. As a result of these missing observations the estimated minimum temperature may have a warm bias. This in turn may have resulted in an overestimation of the extent of some warm anomalies.

In some regions, insufficient data exist to determine the magnitude of anomalies. These regions are located in parts of tropical Africa, southwestern Asia, interior equatorial South America, and along the Arctic Coast. Either current data are too sparse or incomplete for analysis, or historical data are insufficient for determining percentiles, or both. No attempt has been made to estimate the magnitude of anomalies in such regions.

This chart shows general areas of two week temperature anomalies. Caution must be taken in interpreting these anomalies, especially in mountainous regions.

# 4-WEEK GLOBAL PRECIPITATION ANOMALIES

MAY 12 - JUNE 8, 1991



The anomalies on this chart are based on approximately 2500 observing stations for which at least 27 days of precipitation observations (including zero amounts) were received or estimated from synoptic reports. As a result of both missing observations and the use of estimates from synoptic reports (which are conservative), a dry bias in the total precipitation amount may exist for some stations used in this analysis. This in turn may have resulted in an overestimation of the extent of some dry anomalies.

In climatologically arid regions where normal precipitation for the four week period is less than 20 mm, dry anomalies are not depicted. Additionally, wet anomalies for such arid regions are not depicted unless the total four week precipitation exceeds 50 mm.

In some regions, insufficient data exist to determine the magnitude of anomalies. These regions are located in parts of tropical Africa, southwestern Asia, intertropical South America, and along the Arctic Coast. Either current data are too sparse or incomplete for analysis, or historical data are insufficient for determining percentiles, or both. No attempt has been made to estimate the magnitude of anomalies in such regions.

The chart shows general areas of four week precipitation anomalies. Caution must be used in relating it to local conditions, especially in mountainous regions.

# UNITED STATES MONTHLY CLIMATE SUMMARY

MAY 1991

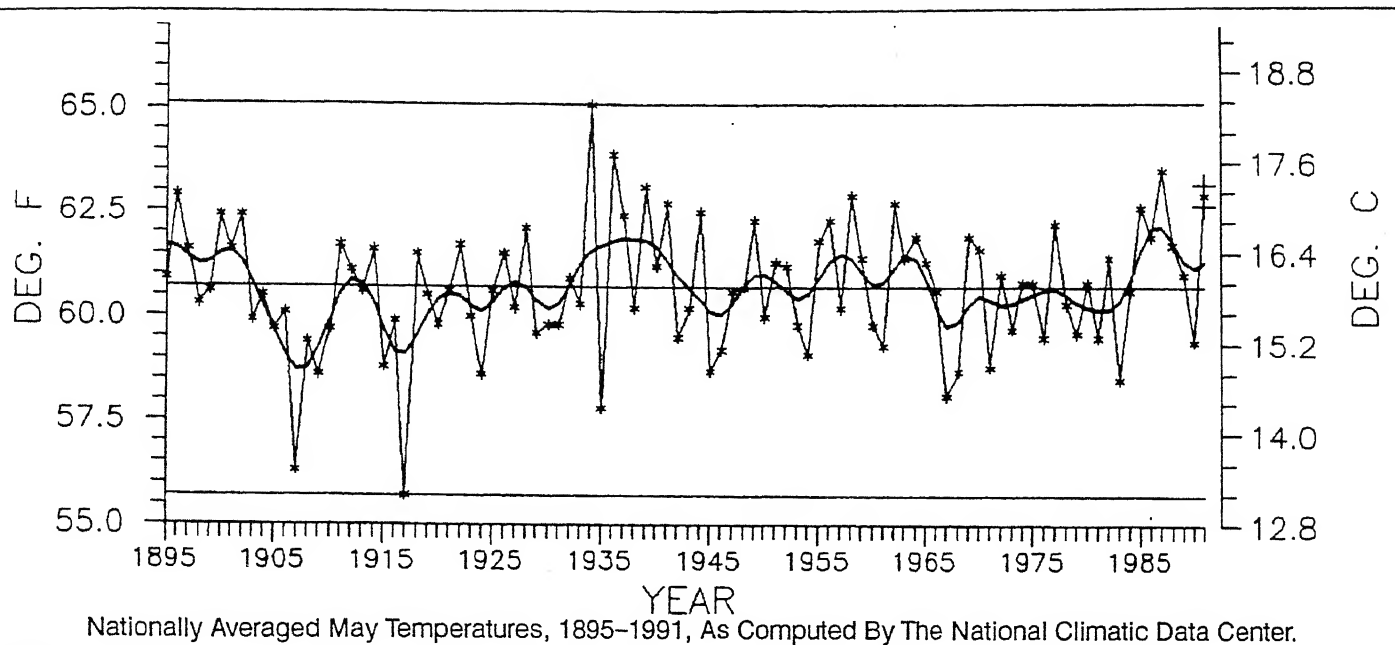
Warm, wet and wild weather prevailed across much of the country of the Rockies while unusually cool and occasionally winter-like conditions affected the West. Severe thunderstorms battered much of Great Plains, Midwest, South, and East. Copious amounts of rain on already-saturated ground in the central Plains and South, causing flooding and delaying crop plantings. Nearly two feet of rain fell in parts of Louisiana and Mississippi for the second consecutive month. In Shreveport, LA, the two-month (April-May) rainfall total of 55.5 inches was the wettest two-month period on record. In addition, three southern states (FL, LA and MS) experienced their wettest January-May period on record (page 17). Over 360 tornadoes during the month brought the year-to-date total up to 923, far exceeding the previous January-May record of 558 in 1982, although secondary numbers usually overestimate tornado touchdowns. Elsewhere, warm conditions across portions of the Rockies caused stream flooding along several rivers. Farther west, up to 18 inches of rain buried portions of the Rockies while unusually mild and dry conditions covered most of Alaska, where ice-jam flooding along several rivers forced evacuations and closed roads. The warm, dry weather also enhanced the spread of a wildfire in the Kenai Wildlife Refuge, south of Anchorage, that burned thousands of acres and caused the closure of several campsites, according to press reports. The month commenced with powerful thunderstorms, some bringing heavy rain, hail, strong wind gusts, and tornadoes, scattered across the Great Plains, South, and parts of New England. Several states experienced inundated flood-ravaged Louisiana with over 10 inches of rain during the first two weeks of the month, contributing to a levee break on the Flat River. Flash flooding was also reported across the Great Plains after thunderstorms dumped heavy amounts of rain in short intervals. Destructive wind gusts and tornadoes accompanied several of the storms, causing widespread damage from South Dakota to New York. Nearly three dozen homes were damaged in north-central Kansas when tornadoes roared through the state. Toward the middle of the month, summer-like weather settled across the nation east of the Rockies. A warm, and muggy flow of air produced numerous record daily highs from the Plains to New England and as readings soared above 90°F. In sharp contrast, unusually cool conditions covered the western third of the country, now blanketing parts of the Cascades, Sierra Nevadas, and Rockies. In Alaska, mild conditions rapidly melted snow cover and generated stream flooding along the Snake, Kuskokwim, and Yukon Rivers. During the latter half of the month, summer-like heat and humidity continued to cook the nation east of the Rockies. Highs here nearly soared above the 90°F mark and numerous daily highs were established. Some locations also recorded the highest readings ever in the month of May. Norfolk, VA hit 99°F on the 30th, setting a May record, but the next day the mercury soared to 100°F, establishing a new monthly record. The combination of the heat and humidity produced apparent temperatures between 105°F and 110°F in portions of the East. Severe weather exploded from the High Plains eastward to the mid-Atlantic, dumping heavy rain, hail, and causing tornadoes. One storm produced fatal lightning in Arlington, DC while another doused parts of Illinois and Indiana as much as 3" of rain in 20 minutes. Farther south, a low pressure system over the Gulf of Mexico soaked southern Florida and portions of the Gulf Coast with up to 11 inches of rain. Meanwhile, cool conditions remained across the western U.S. as lows dipped below freezing from the Pacific Northwest to the northern Rockies and snowed the mountains of Utah and Wyoming. Farther north, heavy rain fell in southern Alaska, aiding firefighters' efforts to contain the fire in the Kenai Wildlife Refuge.

According to the River Forecast Centers, the greatest monthly totals (more than 10 inches) fell on much of the lower Mississippi Valley and Southeast, portions of the central Plains, and scattered locations in the upper Midwest (see Table 1, Figure 1 and 2). Moderate to heavy amounts were recorded in New England, parts of the mid-Atlantic, the Ohio Valley, the Great Lakes, the remainder of the upper Midwest and Great Plains, the northern and central Rockies, the western halves of Oregon and Washington, southern Alaska, and eastern Hawaii (page 11). The 1991 growing season for the Corn and Soybean Belt continues considerably wetter than normal, with March-May ranking as the 7th wettest such period on record (Figure 5). According to NCDC, five of the nine regions (East North Central, Southeast, West North Central, South, and Northwest) finished in the upper (wet) quarter of climatological occurrences with the Southeast recording the 4th wettest May on record. Nationally, May 1991 ranked as the 12th wettest on record.

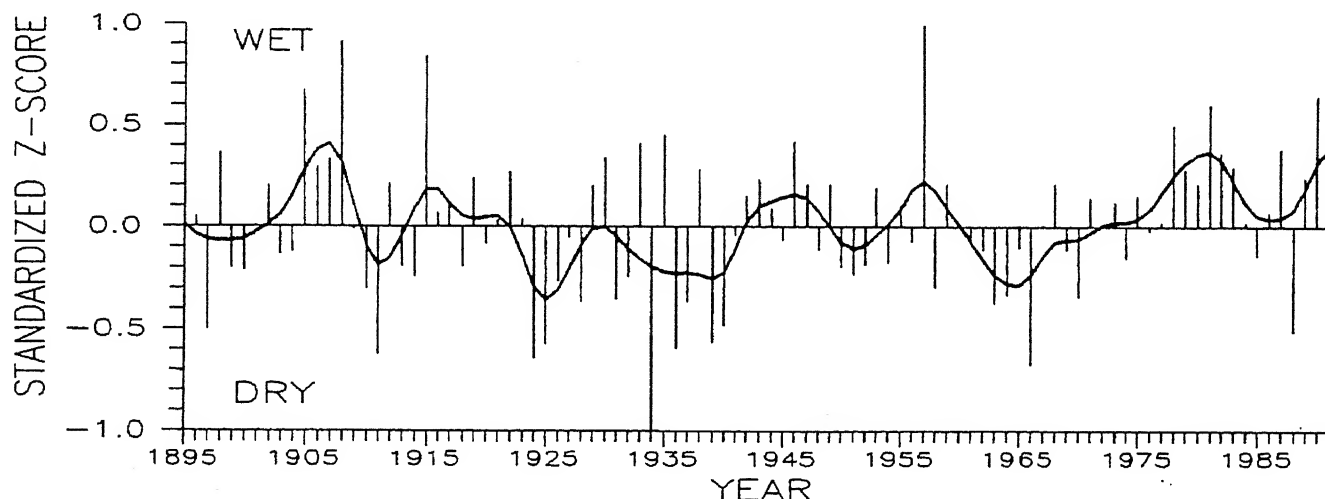
Little or no precipitation was recorded in the southern Rockies, the Southwest, and the remainders of the Far West, Alaska, and Hawaii (see Table 2, Figures 1 and 2). Only two regions (Northeast and Southwest) ranked in the lower (dry) half of Mays, and during the period January-May 1991 only six states (CO, ID, MD, NH, OK, and PA) ranked in the drier third of the distribution with Maryland recording the thirteenth driest such period on record, according to NCDC. However, January-May 1991 finished as the 36th wettest such period on record nationally.

Unseasonably warm weather again covered the eastern two-thirds of the nation as a summer-like upper air pattern became established east of the Rockies during the last half of the month (see Table 3, Figures 3 and 4). Monthly departures between +4°F and +10°F were recorded from the northern Plains to the mid-Atlantic and most of New England as highs soared into the nineties (page 13). Nationally, temperatures averaged above normal with May 1991 ranking as the 7th warmest May in 97 years of record, according to NCDC (page 10). Most of Alaska and Hawaii also observed warmer than normal conditions. Portions of northern Alaska were unusually mild with monthly departures up to +10°F reported at Barrow. A number of May maximum temperature records were observed from the southern Plains to northern New England (Table 7) and many experienced the warmest May on record (Table 6). According to the National Climatic Data Center (NCDC), five of the nine regions finished among the upper (warm) ten percent of Mays, with the Northeast and Central regions observing the 3rd warmest May ever (page 10). During the first five months of this year, four states in the Northeast (CT, NH, NJ, and RI) have noted the warmest start to a year ever and several others in the eastern half of the U.S. have recorded the second warmest January-May period since records began in 1895 (page 18 and front cover). Nationally, January-May 1991 ranks as the seventh warmest such period on record. Unusually mild weather also enveloped much of Alaska as a number of record daily highs were established in the northern sections and temperatures in some of the southern areas soared into the seventies.

Cooler than normal conditions gripped the western third of the nation. Monthly departures of -3°F to -5°F were common in the Great Basin while temperatures across the remainder of the West were slightly below normal (see Table 4, Figures 3 and 4). Lows near freezing were observed from California to Wyoming near the end of the month. The West and Northwest regions finished in the lower (cold) third of all climatological occurrences, establishing the 12th and 15th coldest May on record, respectively (page 10).



### U.S. NATIONAL MEAN PRECIPITATION INDEX MAY, 1895-1991



**TEMPERATURE AND PRECIPITATION RANKINGS FOR MAY 1991, BASED ON THE PERIOD 1895 TO 1991. 1 = DRIEST/COLDEST AND 97 = WETTEST/HOTTEST.**

<u>REGION</u>	<u>PRECIPITATION</u>	<u>TEMPERATURE</u>
NORTHEAST	36	95
EAST NORTH CENTRAL	79	94
CENTRAL	62	95
SOUTHEAST	94	93
WEST NORTH CENTRAL	86	73
SOUTH	76	93
SOUTHWEST	35	56
NORTHWEST	86	15
WEST	65	12
NATIONAL	86	91

*National Climatic Data Center*

Top 10 rankings : **BOLD**      Bottom 10 rankings : *Italics*

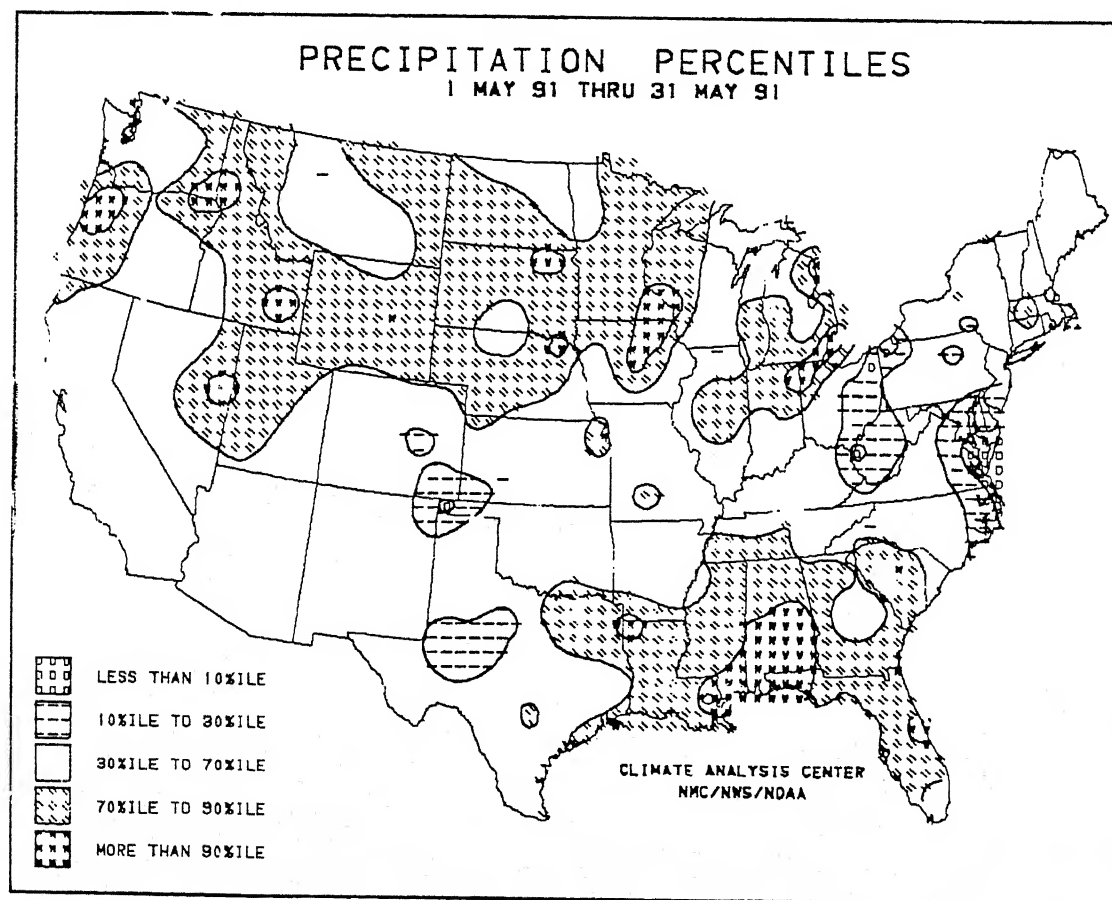
**TABLE 1. SELECTED STATIONS WITH 150% OR MORE OF THE NORMAL PRECIPITATION AND 9.00 INCHES OR MORE PRECIPITATION; OR, STATIONS WITH 11.00 INCHES OR MORE PRECIPITATION AND NO NORMALS DURING MAY 1991.**

<u>STATION</u>	<u>TOTAL</u> <u>(INCHES)</u>	<u>PCT. OF</u> <u>NORMAL</u>	<u>STATION</u>	<u>TOTAL</u> <u>(INCHES)</u>	<u>PCT. OF</u> <u>NORMAL</u>
TUPELO, MS	17.56	***	APALACHICOLA, FL	12.14	412.9
MOBILE, AL	15.03	276.3	ALEXANDRIA/ENGLAND AFB, LA	11.61	224.1
LAKE CHARLES, LA	14.76	263.1	NEW ORLEANS NAS, LA	11.58	***
NEW ORLEANS/MOISANT, LA	14.28	282.8	MONTGOMERY, AL	11.57	290.7
YAKUTAT, AK	14.25	156.2	MILTON/WHITING NAS, FL	11.48	***
LAFAYETTE, LA	13.36	255.0	KEY WEST NAS, FL	11.40	***
BILOXI/KEESLER AFB, MS	13.35	287.7	BOSSIER CITY/BARKSDALE AFB, LA	11.13	***
PORT ARTHUR, TX	13.11	265.4	RUSSELL, KS	11.12	287.3
COLUMBUS AFB, MS	12.98	***	GALVESTON, TX	11.03	331.2
NEW ORLEANS/LAKE FRONT, LA	12.68	***	SHREVEPORT, LA	10.71	227.4
PENSACOLA NAS, FL	12.41	***	BATON ROUGE, LA	10.63	220.5
HOMESTEAD AFB, FL	12.33	***			

*NOTE: Stations without precipitation normals are indicated by asterisks.*

**TABLE 2. SELECTED STATIONS WITH 50% OR LESS OF THE NORMAL PRECIPITATION AND NORMAL PRECIPITATION OF 3.00 INCHES OR MORE DURING MAY 1991.**

<u>STATION</u>	<u>TOTAL</u> (INCHES)	<u>PCT. OF</u> <u>NORMAL</u>	<u>NORMAL</u> (INCHES)	<u>STATION</u>	<u>TOTAL</u> (INCHES)	<u>PCT. OF</u> <u>NORMAL</u>	<u>NORMAL</u> (INCHES)
CAPE HATTERAS, NC	0.49	12.2	4.01	BRADFORD, PA	1.50	40.2	3.73
NORFOLK, VA	0.64	17.2	3.73	MILLVILLE, NJ	1.51	47.2	3.20
ATLANTIC CITY, NJ	0.85	27.9	3.05	WASHINGTON/DULLES, VA	1.51	41.1	3.67
RICHMOND/BYRD, VA	0.91	25.8	3.53	CHATHAM, MA	1.56	41.9	3.72
BOSTON/LOGAN, MA	0.92	26.3	3.50	YOUNGSTOWN, OH	1.57	47.9	3.28
ERIE, PA	1.00	32.2	3.11	/NATIONAL, DC	1.57	45.4	3.46
ABILENE, TX	1.07	32.9	3.25	SALISBURY, MD	1.64	48.5	3.38
PATUXENT RIVER NAS, MD	1.13	34.3	3.29	MCGUIRE AFB, NJ	1.75	46.5	3.76
MARTINSBURG, WV	1.13	31.6	3.58	WILMINGTON, NC	1.75	41.5	4.22
BALTIMORE, MD	1.16	33.9	3.42	WILLIAMSPORT/LYCOMI, PA	1.77	48.5	3.65
HUNTINGTON, WV	1.20	30.8	3.89	DOVER AFB, DE	1.84	48.0	3.83
ZANESVILLE, OH	1.32	36.4	3.63	VICTORIA, TX	2.16	48.3	4.47
CHARLESTON, WV	1.47	40.2	3.66	MIAMI, FL	2.50	38.5	6.50
AKRON, OH	1.49	42.3	3.52				



**FIGURE 2.** May 1991 Precipitation Percentiles. *Climatologically significant wetness affected much of the U.S., with most of the Southeast, lower Mississippi Valley, Pacific Northwest and Great Basin to upper Great Lakes and middle Mississippi Valley, experiencing one of the wettest 30% of the climatological distribution. In contrast, dry conditions affected the central and southern Plains, upper Ohio Valley, and the mid-Atlantic coast.*

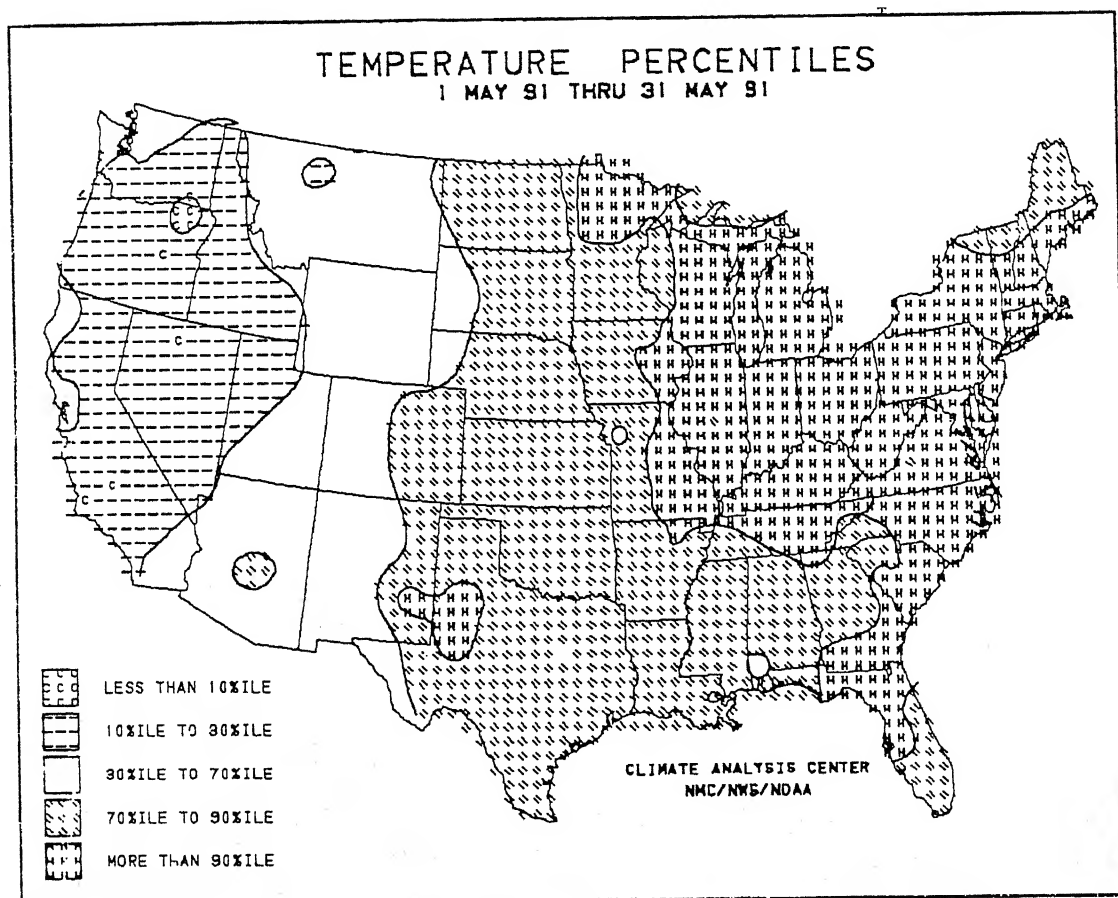


**TABLE 3. MAY 1991 AVERAGE TEMPERATURE 7.5°F OR MORE ABOVE NORMAL.**

<u>STATION</u>	<u>DEPARTURE</u> (°F)	<u>AVERAGE</u> (°F)	<u>STATION</u>	<u>DEPARTURE</u> (°F)	<u>AVERAGE</u> (°F)
AKRON, OH	+9.9	68.7	DETROIT, MI	+8.3	66.6
BARROW, AK	+9.6	28.6	PHILADELPHIA, PA	+8.1	70.9
COLUMBUS, OH	+9.4	70.9	ZANESVILLE, OH	+8.1	68.5
ERIE, PA	+9.2	64.8	BUFFALO, NY	+8.1	64.2
PITTSBURGH, PA	+8.8	68.5	CHARLESTON, WV	+7.9	71.8
YOUNGSTOWN, OH	+8.8	66.2	BRADFORD, PA	+7.9	60.4
SOUTH BEND, IN	+8.5	67.5	FLINT, MI	+7.7	64.2
MILWAUKEE, WI	+8.5	63.1	LOUISVILLE/STANDIFORD, KY	+7.6	73.0
MANSFIELD, OH	+8.4	67.2	CHAMPAIGN, IL	+7.6	69.5
CLEVELAND/HOPKINS, OH	+8.3	66.9	CHICAGO/MIDWAY, IL	+7.5	67.9
TOLEDO, OH	+8.3	66.9			

**TABLE 4. MAY 1991 AVERAGE TEMPERATURE 4.0°F OR MORE BELOW NORMAL.**

<u>STATION</u>	<u>DEPARTURE</u> (°F)	<u>AVERAGE</u> (°F)	<u>STATION</u>	<u>DEPARTURE</u> (°F)	<u>AVERAGE</u> (°F)
MEACHAM, OR	-5.5	42.9	PENDLETON, OR	-4.5	54.0
REDDING, CA	-5.0	63.7	BURNS, OR	-4.4	47.8
LOVELOCK, NV	-4.9	53.2	SEXTON SUMMIT, OR	-4.3	44.8
BLUE CANYON, CA	-4.8	46.7	DELTA, UT	-4.3	54.2
PRICE, UT	-4.8	52.9	BAKERSFIELD, CA	-4.3	66.2
WALLA WALLA, WA	-4.7	55.6	ELY, NV	-4.1	46.0
WINNEMUCCA, NV	-4.5	50.2	ELKO, NV	-4.1	48.2
OGDEN/HILL AFB, UT	-4.5	53.6	TONOPAH, NV	-4.1	52.9



**FIGURE 4.** May 1991 Temperature Percentiles. *Most of the nation east of the Rockies felt climatologically significant warmth with a portion of the southern High Plains and much of the eastern half of the country in the warmest 10% of the climatological distribution. The Far West and much of the Intermountain West experienced a May among the cooler 30% of the distribution.*

**TABLE 5. RECORD MAY PRECIPITATION.**

<u>STATION</u>	<u>TOTAL</u> <u>(INCHES)</u>	<u>NORMAL</u> <u>(INCHES)</u>	<u>PCT. OF</u> <u>NORMAL</u>	<u>RECORD</u> <u>TYPE</u>	<u>RECORDS</u> <u>BEGAN</u>
APALACHICOLA, FL	12.24	2.94	412.9	HIGHEST	1930
GALVESTON, TX	11.03	3.33	331.2	HIGHEST	1871
FORT WAYNE, IN	8.80	3.47	253.6	HIGHEST	1939
DES MOINES, IA	7.88	3.94	200.0	HIGHEST	1939
WATERLOO, IA	7.72	4.13	186.9	HIGHEST	1949
ABERDEEN, SD	7.36	2.55	288.6	HIGHEST	1951
EUGENE, OR	6.03	1.95	309.2	HIGHEST	1951
SALEM, OR	4.51	1.93	233.7	HIGHEST	1951
LEWISTON, ID	3.74	1.41	265.2	HIGHEST	1951
PENDLETON, OR	3.19	1.07	298.1	HIGHEST	1935
BETTLES, AK	2.09	0.50	418.0	HIGHEST	1951
ERIE, PA	1.00	3.11	32.2	LOWEST	1954
NORFOLK, VA	0.64	3.73	17.2	LOWEST	1947

NOTE: Trace precipitation is considered ZERO precipitation. Stations with no precipitation are only included if normal precipitation is 0.25 inches or more.

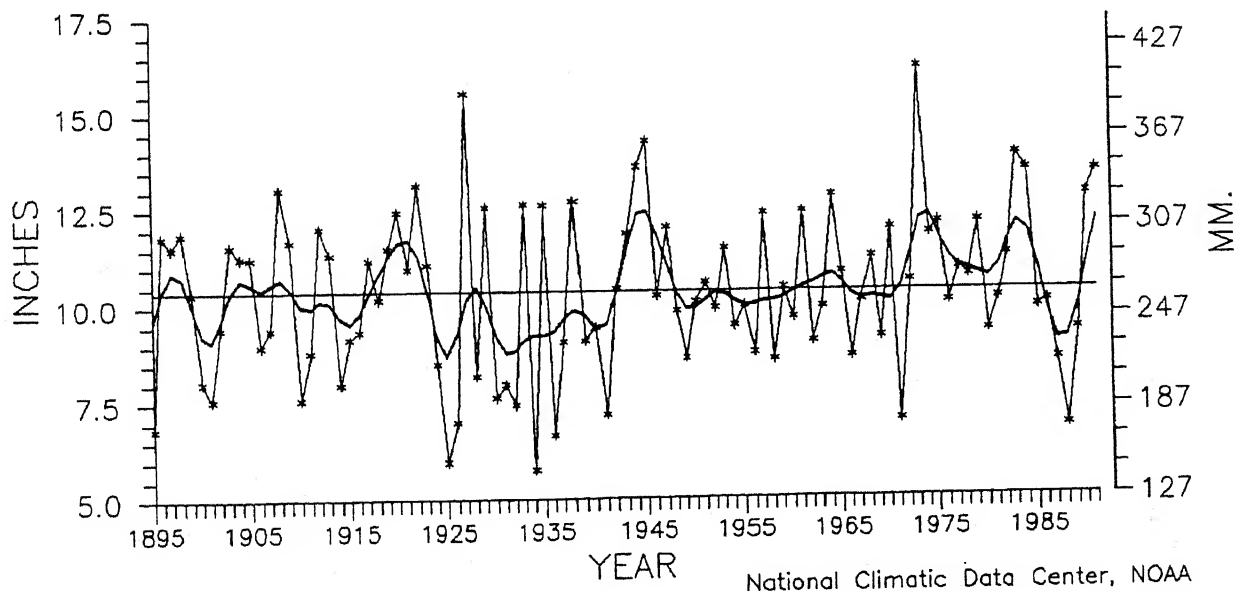
**TABLE 6. RECORD MAY AVERAGE TEMPERATURES.**

<u>STATION</u>	<u>AVERAGE</u> <u>(°F)</u>	<u>NORMAL</u> <u>(°F)</u>	<u>DEPARTURE</u> <u>(°F)</u>	<u>RECORD</u> <u>TYPE</u>	<u>RECORDS</u> <u>BEGAN</u>
AKRON, OH	68.7	58.8	+9.9	HIGH	1944
BARROW, AK	28.6	19.0	+9.6	HIGH	1921
COLUMBUS, OH	70.9	61.5	+9.4	HIGH	1878
ERIE, PA	64.8	55.6	+9.2	HIGH	1954
YOUNGSTOWN, OH	66.2	57.4	+8.8	HIGH	1944
MILWAUKEE, WI	63.1	54.7	+8.5	HIGH	1947
CLEVELAND/HOPKINS, OH	66.9	58.6	+8.3	HIGH	1947
TOLEDO, OH	66.9	58.6	+8.3	HIGH	1951
DETROIT, MI	66.6	58.3	+8.3	HIGH	1851
PHILADELPHIA, PA	70.9	62.8	+8.1	HIGH	1947
BUFFALO, NY	64.2	56.1	+8.1	HIGH	1947
CHARLESTON, WV	71.8	63.9	+7.9	HIGH	1951
LOUISVILLE/STANDIFORD, KY	73.0	65.5	+7.6	HIGH	1947
ST. LOUIS, MO	73.0	65.7	+7.4	HIGH	1851
NEW YORK/LAGUARDIA, NY	69.1	61.7	+7.4	HIGH	1947
ALLENTOWN, PA	67.3	59.9	+7.4	HIGH	1951
WILLIAMSPORT/LYCOMI, PA	66.9	59.5	+7.4	HIGH	1947
HUNTINGTON, WV	71.8	64.6	+7.2	HIGH	1947
BALTIMORE-WASHINGTON INTL., MD	70.5	63.3	+7.2	HIGH	1951
WASHINGTON/DULLES AIRPORT, VA	69.3	62.1	+7.2	HIGH	1951
HARRISBURG, PA	69.0	61.9	+7.1	HIGH	1951
WASHINGTON/NATIONAL, DC	73.0	66.0	+7.0	HIGH	1951
WILKESBARRE, PA	65.6	58.6	+6.9	HIGH	1951
BECKLEY, WV	66.6	59.7	+6.9	HIGH	1951
NEWARK, NJ	68.8	62.2	+6.6	HIGH	1951
HARTFORD, CT	65.8	59.4	+6.4	HIGH	1951
ALPENA, MI	58.5	52.0	+6.5	HIGH	1951
CAPE HATTERAS, NC	73.4	67.1	+6.3	HIGH	1951
NORFOLK, VA	72.9	66.6	+6.3	HIGH	1951
BRIDGEPORT, CT	64.6	58.3	+6.3	HIGH	1951
PROVIDENCE, RI	63.9	57.7	+6.2	HIGH	1951
RICHMOND/BYRD, VA	72.1	66.0	+6.1	HIGH	1951
ATLANTIC CITY, NJ	66.0	60.1	+5.9	HIGH	1951
PORTLAND, ME	58.1	52.7	+5.4	HIGH	1951
BOSTON/LOGAN, MA	63.3	58.5	+4.8	HIGH	1951
EASTPORT, ME	54.0	49.5	+4.5	HIGH	1951
MERIDIAN, MS	75.9	71.8	+4.1	HIGH	1951
MIAMI, FL	81.5	78.4	+3.1	HIGH	1951
HOUSTON, TX	78.1	75.4	+2.7	HIGH	1951
WEST PALM BEACH, FL	80.2	77.9	+2.3	HIGH	1951

**TABLE 7. RECORD MAY EXTREME TEMPERATURES.**

<u>STATION</u>	<u>EXTREME</u> (°F)	<u>DATE</u>	<u>RECORD</u> <u>TYPE</u>	<u>RECORDS</u> <u>BEGAN</u>
NORFOLK, VA	100	MAY 31	HIGHEST	1949
WASHINGTON/NATIONAL, DC	99	MAY 31	HIGHEST	1941
BALTIMORE-WASHINGTON INTL., MD	98	MAY 30	HIGHEST	1951
PHILADELPHIA, PA	97	MAY 31	HIGHEST	1941
ROCKFORD, IL	93	MAY 28	HIGHEST	1950
ST. LOUIS, MO	93	MAY 28	HIGHEST	1958
AKRON, OH	93	MAY 29	HIGHEST	1949
CHARLESTON, WV	93	MAY 26	HIGHEST	1948
HUNTINGTON, WV	93	MAY 30	HIGHEST	1962
MILWAUKEE, WI	93	MAY 28	HIGHEST	1941
CAPE HATTERAS, NC	91	MAY 29	HIGHEST	1958
COLUMBIA, MO	90	MAY 28	HIGHEST	1969
BUFFALO, NY	90	MAY 23	HIGHEST	1943
ERIE, PA	90	MAY 16	HIGHEST	1953
SAULT STE. MARIE, MI	89	MAY 15	HIGHEST	1941
BECKLEY, WV	87	MAY 29	HIGHEST	1963

**PRIMARY CORN AND SOYBEAN BELT PRECIPITATION  
MARCH-MAY, 1895-1991**



National Climatic Data Center, NOAA

**FIGURE 5.** March – May, 1895 – 1991, Averaged Precipitation for the Primary Corn and Soybean Belt. *The 1991 growing season for the Corn and Soybean Belt continued to be considerably wetter than normal, with March – May 1991 ranking as the 7th wettest such season on record.*

**PRECIPITATION RANKINGS FOR JAN-MAY 1991, BASED ON THE PERIOD 1895 TO 1990. 1 = DRIEST, 97 = WETTEST.**

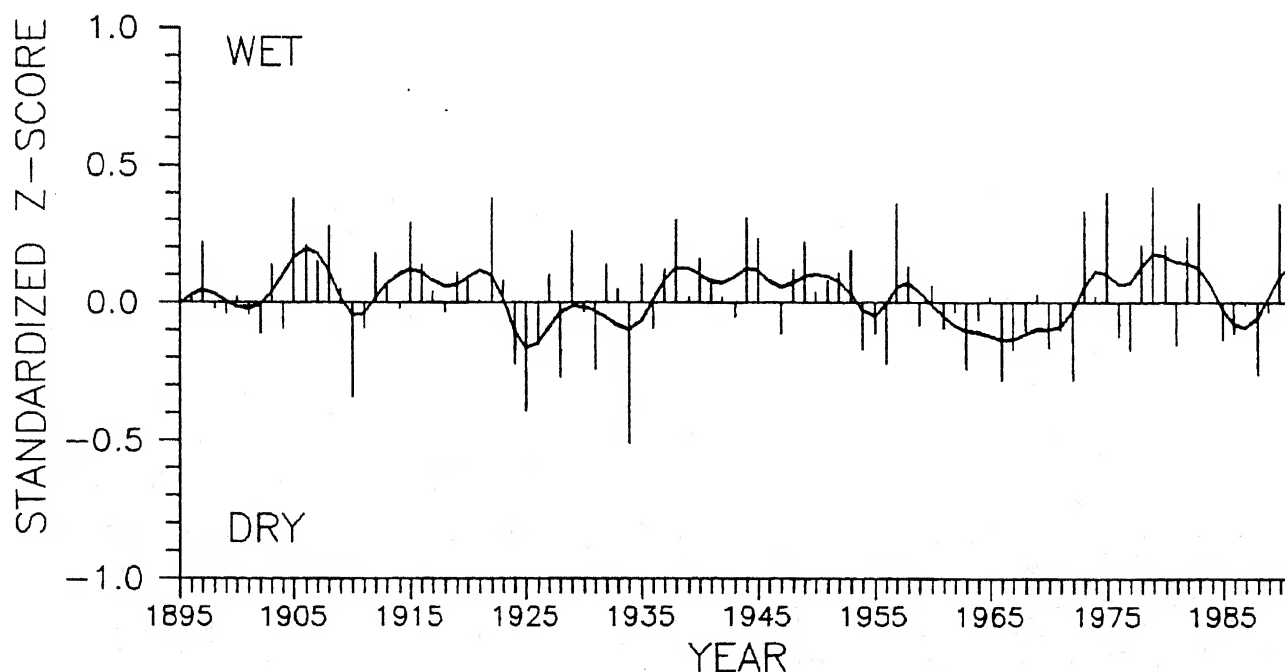
<i>STATE</i>	<i>RANK</i>	<i>STATE</i>	<i>RANK</i>	<i>STATE</i>	<i>RANK</i>	<i>STATE</i>	<i>RANK</i>
AL	96	IA	95	NE	69	RI	74
AZ	75	KS	42	NV	51	SC	79
AR	74	KY	58	NH	32	<b>SD</b>	<b>94</b>
CA	52	<b>LA</b>	<b>97</b>	NJ	55	TN	72
CO	14	ME	42	NM	35	TX	71
CT	65	MD	13	NY	60	UT	52
DE	46	MA	62	NC	55	VT	38
FL	<b>97</b>	MI	74	ND	76	VA	48
<b>GA</b>	<b>94</b>	<b>MN</b>	<b>94</b>	OH	37	WA	68
ID	30	MS	97	OK	20	WV	51
IL	69	MO	40	OR	37	WI	78
IN	57	MT	56	PA	23	WY	73

*National Climatic Data Center*

Top 10 rankings : **BOLD**

Bottom 10 rankings : *Italics*

**U.S. NATIONAL MEAN PRECIPITATION INDEX  
JANUARY-MAY, 1895-1991**



January - May Nationally Averaged Precipitation Index, 1895-1991, As Computed By The National Climatic Data Center. *The first five months of the year averaged above the median (36th wettest such period) primarily due to a wet April and May. This index takes into account local normals so that typically wet regions do not dominate the index value.*

**TEMPERATURE RANKINGS FOR JAN-MAY 1991, BASED ON THE PERIOD 1895 TO 1991. 1 = COLDEST AND 97 = WARMEST.**

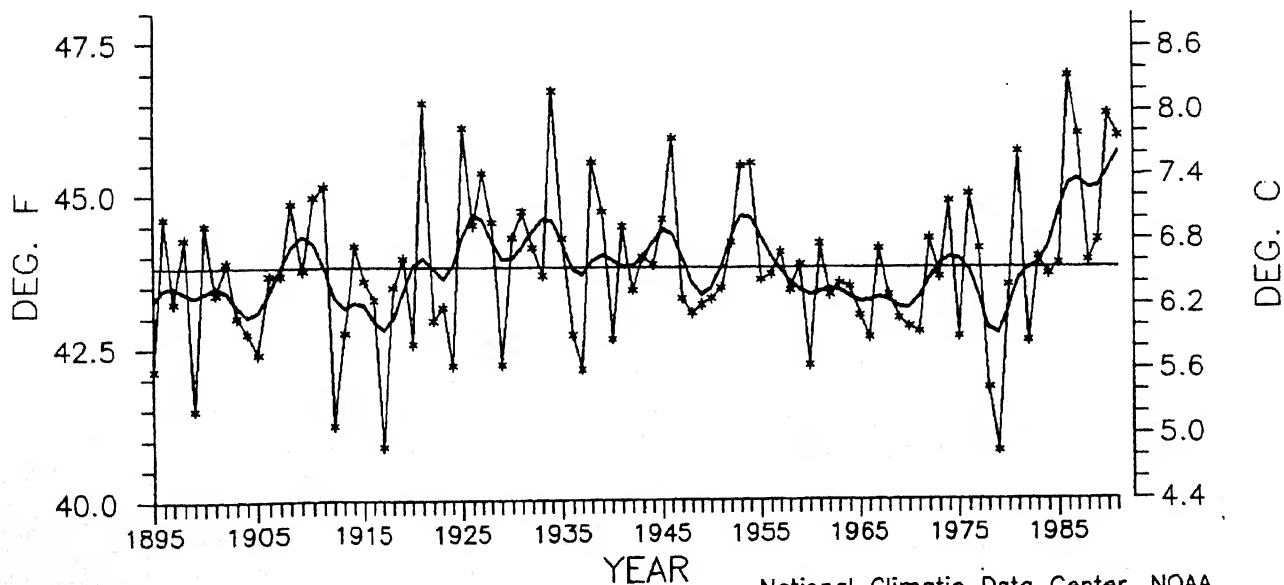
<i>STATE</i>	<i>RANK</i>	<i>STATE</i>	<i>RANK</i>	<i>STATE</i>	<i>RANK</i>	<i>STATE</i>	<i>RANK</i>
AL	75	IA	88	NE	91	RI	97
AZ	52	KS	94	NV	47	SC	94
AR	84	KY	95	NH	97	SD	90
CA	50	LA	73	NJ	97	TN	94
CO	70	ME	79	NM	70	TX	76
CT	97	MD	95	NY	96	UT	27
DE	94	MA	96	NC	95	VT	96
FL	96	MI	95	ND	92	VA	96
GA	85	MN	92	OH	96	WA	54
ID	70	MS	79	OK	96	WV	96
IL	93	MO	91	OR	46	WI	93
IN	94	MT	83	PA	96	WY	83

*National Climatic Data Center*

Top 10 rankings : **BOLD**

Bottom 10 rankings : *Italics*

**U.S. NATIONAL TEMPERATURE  
JANUARY-MAY, 1895-1991**



National Climatic Data Center, NOAA

January - May Nationally Averaged Temperatures, 1895-1991, as Computed by the National Climatic Data Center. *The year has gotten off to an unusually mild start, ranking as the 7th warmest such period on record. January - May temperatures have not averaged significantly colder than normal for the last nine years.*